PUBLIC HEALTH BRIEFING
RHODE ISLAND DEPARTMENT OF HEALTH
DAVID GIFFORD, MD, MPH, ACTING DIRECTOR OF HEALTH
EDITED BY JAY S. BUECHNER, PHD

OSTEOPOROSIS: MISSED OPPORTUNITIES FOR DIAGNOSIS AND TREATMENT IN RHODE ISLAND

NANCY SUTTON, MS, RD, DEBORAH PEARLMAN, PHD,
GEETHA GOPALAKRISHNAN, MD, AND DIANE CALLAHAN, BS, RN

US SURGEON GENERAL RESPONDS TO THE BURDEN OF OSTEOPOROSIS

The *United States (US) Surgeon General's Report on Bone Health and Osteoporosis* recommends prevention, timely diagnosis, and appropriate treatment of osteoporosis throughout the lifespan, focusing on women and high-risk men of all races, ethnicities, and income levels. An estimated 44 million Americans suffer from osteoporosis or osteopenia, resulting in an estimated 1.5 million bone fractures each year.[1,2]

Osteoporosis is a disease characterized by low bone mass and the deteriation of bone structure. As a result, bones become weak and fragile increasing the risk of fracture.

Osteopenia is term used to identify a person with low bone mass, but not as low as osteoporosis. As a result, bones are weaker and more fragile than normal, healthy bone with some increase in the risk of fracture.[1] Low bone mass is the term used in this article when referring to both osteoporosis and osteopenia.

WHY SHOULD HEALTH CARE PROVIDERS DISCUSS OSTEOPOROSIS WITH THEIR PATIENTS?

In the United States, osteopenia/osteoporosis remains under diagnosed and undertreated.[1,3,4,5] Perhaps as many as one in two American women with osteopenia/osteoporosis remain undiagnosed.[3,6]

Low bone mass (LBM) is a problem for people of all races and ethnicities. For example, national data show that 72% of Asian, 59% of Hispanic, and 40% of non-Hispanic black women ages 50 and older have LBM, defined as osteoporosis or osteopenia. (Table 1).[7] In addition, 33% of those with osteopenia or osteoporosis are men.[7]

Osteoporosis causes about 300,000 hip fractures, 700,000 spinal fractures, and 250,000 wrist fractures annually in the United States.[2] Fractures are often debilitating, deadly, and costly. About one in four hip fractures among people ages 50 and older is followed by death within one year of the fracture. Of those who live longer, about one in three require long-term nursing home care.[2] Rhode Island spends an estimated $60 million per year on hospital and nursing home costs associated with osteoporosis-related fractures.[2]

DEFINING BONE LOSS

A **bone mineral density (BMD)** test remains the best predictor of osteoporotic fractures to date:[8]

Osteoporosis: BMD t-score: –2.5 or less
Osteopenia: BMD t-score: –1.0 to –2.5

One standard deviation below the mean BMD of young women (t-score) is associated with a relative risk of 2.6 for hip fracture and 2.4 for vertebral fracture.[9] Siris *et al.* assert that fracture risk exists not only for patients with osteoporosis, but also for those with osteopenia.[10] In one study of 149,000 postmenopausal women, 82% of those who presented with fractures had a t-score greater than –2.5.[10]

GUIDELINES

There is a strong consensus in the United States that all women ages 65 and older should receive a BMD test routinely. The medical community is also close to consensus that post-menopausal women under age 65 who are at increased risk for osteoporotic fracture should receive a BMD test routinely, (Table 2).[8,11,12] BMD testing is also recommended by the International Society for Clinical Densitometry for all men ages 70 and

older, and all men under age 70 who present with fragility fractures or who are at increased risk for osteoporotic fracture.[12]
National guidelines promote routine patient education for osteoporosis prevention and select medication use for high-risk individuals.[8,12] Approved options for the treatment and prevention of osteoporosis include calcium, vitamin D, estrogen replacement, alendronate, residronate, raloxifene, calcitonin, and teriparatide.[2]

Rhode Island Statistics

Burden

An estimated 172,600 men and women in Rhode Island (RI) ages 50 and older have osteopenia or osteoporosis.[7] As expected, the majority of Rhode Islanders at risk are postmenopausal women (Table 3), but about one-third are men. (Estimates of the prevalence of low bone mass in Rhode Island are not presently available by race and ethnicity.)

Screening

In 2003, 63% of Rhode Island women ages 65 and older (the group at highest risk of LBM) reported that a health care provider ever recommended BMD testing.[13]

Counseling

In 2003, 63% of Rhode Island women and 10% of Rhode Island men ages 50 and older reported that a health care provider had ever discussed the risk of osteoporosis with them.[13] Nearly half of the women ages 50 and older (51%) but only 12% of men in this age group reported that a doctor, nurse, or other health care professional had ever spoken to them about calcium in the diet.[13]

Discussion

Missed Opportunities

Despite a strong national consensus that women ages 65 and older should receive a BMD test, one in three Rhode Island women in this age group did not recall a health care provider ever recommending it. Most women in this age group (93%) had visited a health care provider in the past 12 months for routine medical care. Thus, in more than 20,000 recent encounters for routine medical care, health care providers missed an opportunity to recommend an essential test.
Many opportunities to counsel patients about osteoporosis were also missed. One-third of Rhode Island women ages 50 and older reported never having been counselled about osteoporosis despite a recent encounter for routine health care (totalling about 50,000 visits). Even more women had no recollection of discussing dietary counselling with a health care provider despite a recent medical encounter (totalling about 70,000 visits).

Health care providers often play a key role in behaviour change. Patient counselling about osteoporosis, its prevention, detection, and management, may lead to lifestyle change and timely diagnosis and treatment. Messages relevant to osteoporosis are relevant to the prevention and control of obesity, arthritis, cancer, diabetes, and cardiovascular illnesses:[14,15,16]

- Eat a balanced diet with attention to calcium-rich foods.
- Get regular, weight-bearing exercise.
- Don't smoke; don't drink to excess.

Men

Although most recent data estimate that 25% of men ages 50 and older will have an osteoporotic fracture in their lifetimes, few men receive education about this chronic and debilitating disease, or treatment for it.[7,17] Among older Rhode Islanders, men are far less likely than women to report that a health care provider had ever discussed osteoporosis or dietary calcium with them, and this despite significant smoking histories in a majority of Rhode Island men ages 50 and older (68%).

Limitations

Rhode Island data for this brief were generated by the Rhode Island **Behavioral Risk Factor Surveillance System (BRFSS).** This statewide random-digit-dial telephone survey collects information on a wide variety of health issues from Rhode Island adults 18 years of age and older. Limitations of the BRFSS should be considered when interpreting BRFSS results. First, persons who do not have a telephone cannot participate in the BRFSS. Second, the BRFSS is less likely to survey people of low income than others. Third, all data are based on self-report from respondents. Some individuals may have difficulty remembering counseling and testing.

Conclusions

Despite the limitations of the BRFSS, the data in this brief demonstrate considerable room for improvement in the routine health care of older Rhode Islanders. Based on the findings presented here, the Rhode Island Osteoporosis Program remains strongly committed to working